

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

In the Matter of	)	
	)	
NUCLEAR ENERGY INSTITUTE	)	
and	)	
UNITED TELECOM COUNCIL	)	ET Docket No. 05-345
	)	
Request for Waiver to Permit	)	
The Use of Certified Wireless Headsets and	)	
Intercom Devices at Nuclear Facilities	)	

To: OET

**COMMENTS OF  
NEW AMERICA FOUNDATION, CHAMPAIGN URBANA WIRELESS NETWORK,  
AND FREE PRESS**

New America Foundation (NAF), Champaign Urbana Wireless Network (CUWN), and Free Press (FP) (collectively NAF, *et al.*) do not dispute either the importance of maintaining the safety of the nuclear power industry to our national critical infrastructure or the usefulness of the proposed devices to the nuclear industry. Were these the only factors to consider, NAF, *et al.* would wholeheartedly support the above captioned request for waiver.

However, the Nuclear Energy Institute and United Telecom Council (collectively NEI) have failed to show why the Commission should grant a waiver for the benefit of one industry, when completion of the pending proceeding in ET Docket No. 04-186 would better serve the public interest. Many other industries that provide services necessary for public safety and maintenance of the nation's critical infrastructure would benefit from access to UHF TV spectrum.

Furthermore, at least one commercial vendor appears to provide equipment for the nuclear industry and others working in similar dangerous environments that meet the needs described in the *Petition*. As this equipment uses frequencies available to Petitioners' members under Part 90 or Part 15 of the Commission's rules, the record does not at this time demonstrate a need for a waiver. This raises the possibility that the equipment manufacturer, Telex, has sought to bring its product to market by acquiring lengthier and lengthier "temporary" waivers until it achieves a sufficient number of users to persuade the Commission to grant a permanent waiver or secondary licensed status.

Sadly, the Commission's past practices encourage such "gaming" of the rules. This was one of the reasons why the Spectrum Task Force and numerous others have urged the Commission to adopt new approaches that increase flexibility of spectrum use for all, such as the Part 15 "unlicensed" spectrum. The Commission should not encourage these practices by granting a five year waiver.

Nevertheless, the Commission does have a responsibility to protect the safety of workers in plants that have deployed the Telex equipment until, in the words of the *Petition*, suitable alternative technology can be found. *Petition* at 18. The Commission should therefore grant only a one year continuation of the current (expired) STA, rather than a new five year general waiver. The Commission should also explicitly condition the STA on conversion to equipment authorized under the rules ultimately adopted in 04-186 or using some other technology that does not require a waiver. Petitioners, and others who might otherwise deploy the Telex technology, should have no expectation that the Commission will again allow parties to manipulate its rules and create a new class of privileged users at the expense of the public.

## NATURE OF PARTIES

***New America Foundation.*** NAF is a nonpartisan, non-profit public policy institute based in Washington, D.C., which, through its Spectrum Policy Program, studies and advocates reforms to improve our nation's management of publicly-owned assets, particularly the electromagnetic spectrum. <http://www.newamerica.net>.

***Champaign-Urbana Wireless Network.*** CUWN operates and administers a municipal wireless network for the City of Champaign, IL using open source mesh technology that it has developed and released to the public. Thousand of people from around the world have downloaded this software to implement commercial and noncommercial mesh networks in environments from the largest American cities to isolated villages in developing nations. CUWN is a recognized leader in the open source community for the development of wireless mesh solutions and provides advice to community wireless networks both in the United States and abroad. <Http://www.cuwireless.net>.

***Free Press*** a national nonpartisan organization working to increase informed public participation in crucial media policy debates, and to generate policies that will produce a more competitive and public interest-oriented media system with a strong nonprofit and noncommercial sector. Free Press serves as a resource to community wireless networks and the community wireless movement. <http://www.freepress.net/>

## ARGUMENT

NEI asks for a waiver from existing Commission rules governing the use of the UHF TV frequencies. As NEI's filings attest, access to the UHF frequencies would provide enormous advantages for communications purposes. Rather than limit these benefits to a single industry, however, the Commission should extend the benefits to the broader public.

### I. NEI HAS FAILED TO DEMONSTRATE THAT NO ALTERNATIVE TO A WAIVER EXISTS.

In support of its request for a five year waiver, Petitioners claim to have conducted an "exhaustive search" for alternative technologies. *Petition* at 17. This conclusory statement, is supported only by the Declaration of Marvin Fertel, the Chief Nuclear Officer of NEI. Mr. Fertel, in turn, states that he relies on his general knowledge of the industry and

the reports of those who used the Telex equipment pursuant to the STA. Petitioners do not provide any list of other wireless vendors that they examined or explain in any detail why only the Telex models, for which they are not eligible for licensing without a waiver, are the only available solution.

A cursory internet search conducted by NAF, *et al.* found a vendor providing wireless systems that meet the bare bones description provided in the *Petition*. Communications Applied Technology (CAT) appears to offer numerous communications systems for hazardous environments using licensed frequencies for which Petitioners' members are eligible and Part 15 "unlicensed" spectrum.<sup>1</sup> According to its promotional literature, CAT provides equipment to the Department of Energy for its nuclear facilities, the United States Armed Forces, HAZMAT teams, and others requiring reliable wireless communications in hostile environments. A list of their available products appears to match the needs described in the *Petition*, and at a cheaper price.<sup>2</sup> The apparent failure to consider CAT equipment is even more puzzling given that CAT advertises to the nuclear industry. *See Nuclear News Buyers Guide 2005* at 42.

Section 90.35 of the Commission's Rules lists numerous frequency bands in the Industrial/Business Pool for which Petitioners' members are eligible for a Part 90 license. These frequencies range from 2 MHz to 10.7 GHz. There are large number of frequencies in the 450-470 MHz range that would be expected to have the same technical characteristics that were encountered in the stated test at 523.3 MHz and 632.7 MHz. The

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<sup>1</sup>[Http://www.c-at.com](http://www.c-at.com)

<sup>2</sup><http://www.c-at.com/products.html>

power limits in Section 90.205 would permit several times the 0.25 W power used in the test. Given this wide range of available frequencies, many with propagation characteristics capable of penetrating the solid walls described by Petitioners.

In short, based purely on the available evidence in the Petition, it appears that Telex prevailed upon the Petitioners to try their product and advocate for permission to use it as a strategy to gain entry to the market. Such behavior, requesting a temporary experimental waiver, promising to limit the user pool to a small set of eligible parties with a demonstrated need as a means of gaining entry to the market, then attempting to leverage the “temporary” waiver to generate favorable rule changes, is sadly common place. The Commission’s traditional “command and control” regime encourages exactly this sort of behavior. Rather than seeking general solutions to the problem of spectrum access, parties with financial resources seek narrow exceptions and temporary waivers. This retards the ability of the public to benefit from spectrum technologies by encumbering useful spectrum with new limitations and new classes of stakeholders. The Commission should end this practice by resolving the pending rulemaking rather than by encouraging individual waiver requests.

## **II. THE PROPOSED WAIVER PERPETUATES THE COMMISSION’S DISCREDITED “COMMAND AND CONTROL” MODEL FOR SPECTRUM ALLOCATION.**

In November 2002, the Commission issued its landmark Report from the Spectrum Task Force. The culmination of a lengthy process involving public comment, public hearings, and consultation with stakeholders and experts, the Report was intended to provide a detailed analysis of the current use of spectrum regulated by the FCC and recommendations for improvement in the 21<sup>st</sup> Century. “Spectrum Policy Task Force

Report,” ET Docket No. 02-135 (November 2002).

As the Report observed, the process of allocating small slivers of spectrum dedicated to specific uses and limited to a handful of users has created huge inefficiencies and retarded the deployment of wireless services to the public. This “command and control” approach is further complicated by the layering of secondary services and additional spectrum use rights on the initial allocation. Each new layer creates its own set of stakeholders dedicated to preserving the status quo or leveraging their existing licenses to further expand their own exclusive uses of the spectrum. As society has become increasingly mobile, and the ability to utilize spectrum efficiency has grown, this complex layering of licensees, secondary licensees, protected services has retarded innovation and economic growth. As a result, the command and control model has been sharply criticized by scholars, regulators and advocates.

While no one can question the worthiness of improving safety in the nuclear industry, grant of the NEI *Petition* would perpetuate this command and control system. The continuing cycle of petitions and STAs illustrates how the allocation of limited spectrum use rights inevitably grows until the “temporary” waiver becomes the “secondary service” with demands for protection against future non-interfering uses.

NEI has proven that the technology works and serves a vital public interest in promoting safety in the nuclear industry. The system developed by Telex could benefit not merely the interests of nuclear safety, but other industries that work with hazardous environments. But, because of the influence of the legacy stakeholders, Telex has been forced to limit the availability of its equipment to a single use, whose utility is without question, located far away from any population center. Even now that it has proven its

case, NEI dares ask only for a “temporary” five year waiver. At the end of five years, however, nothing prevents NEI and Telex from applying for continued extensions or a permanent waiver.

In other words, the traditional command and control system, which grant of the Petition would only perpetuate, provides the worst of all possible worlds for deployment of new spectrum services. It maximizes inefficiency and reenforces the power of legacy users to exclude new entrants. As a consequence, genuine innovators must artificially constrain their new services to appease the incumbents, hoping to “game the system” gradually and incrementally expand the new service. These new entrants, in turn, become a new class of incumbents that the next innovator must propitiate and accommodate, further decreasing the utility of the spectrum.

The *Petition* itself documents how this process has worked in the nuclear industry, providing a lengthy list of special exceptions and privileged users in the industry in the band. *Petition* at 14-16. Rather than following these precedents, the Commission should follow the recommendation of the Spectrum Task Force and move away from granting special privileges to a limited class of users.

The *NEI Petition* seeks a waiver for a much needed service in a critical infrastructure industry. It did not create the system in which it is forced to play. Nevertheless, rather than continue to perpetuate a discredited system that ill serves the public, the Commission should provide only a one-year waiver conditioned on conclusion of ET Docket 04-186.

### **III. CONCLUDING ET DOCKET NO. 04-186 WOULD MEET THE NEEDS OF PETITIONERS WHILE BETTER SERVING THE PUBLIC INTEREST.**

Instead of granting a “temporary” five year waiver, the Commission should conclude

the pending proceeding in ET Docket No. 04-186 and open the benefits of the broadcast band to all. Favorable resolution of 04-186 will permit dozens of industries critical to our national security and economic well being, yet ineligible for the public safety pool, to benefit from devices like those offered by Telex.

Recent progress on interference avoidance issues should put to rest the objections of incumbents that no “proven technology” exists to avoid interference with licensed users in the band. As reported by Communications Daily, devices using dynamic frequency selection passed NTIA field tests in Texas. Howard Buskirk, “5 GHz Device Using DFS Passes Field Test in TX,” *Communications Daily*, December 30, 2005. According to the story, the devices successfully avoided interference with active military radar under field conditions. A technology capable of avoiding secret military radar can certainly avoid television signals whose transmitter locations are known and with a clearly identifiable signal.

The Commission should therefore grant the *Petition* on condition that grant of the *Petition* and use of the Telex systems in no way delay the resolution of ET Docket No. 04-186. To the extent the Telex equipment does not comply with the final rules adopted, the Commission would provide Petitioners whatever balance remains on the proposed temporary waiver to comply with the final rules adopted in 04-186 or seek a further waiver that accommodates whatever rules the Commission may adopt. This would give NEI reasonable time to amortize the equipment that it has purchased, or conform to the new rules.

This complies with the Petitioners’ own language in support of the waiver. According to the *Petition*, the five year “temporary” waiver will provide adequate certainty until



“alternative equipment becomes available.” *Petition* at 17-18. In theory, after this new equipment is tested and installed, and staff trained on the new equipment, the Telex waiver will cease. As the Petitioners explain “the key point is that all this will take time to accomplish, and, in the meantime, the plants need to rely on the Telex equipment to perform the essential tasks described herein.” *Id.* At 18.

Conditioning the waiver on the outcome of ET Docket 04-186 fulfills all these conditions. Indeed, given that Petitioners themselves recognize that a waiver should constitute a rare and temporary exception until a more general solution becomes available, it should not create any difficulty if the Commission explicitly conditions the waiver on conversion to equipment that meets the rules ultimately established in ET Docket No. 4-186, and that Petitioners will enjoy no greater protection from interference than those available to any other user of equipment approved under whatever final rules the Commission adopts.

#### **IV. THE COMMISSION SHOULD ONLY GRANT A ONE YEAR EXTENSION.**

Although Petitioners seek a five year “temporary” waiver, they offer no justification for this extension other than a “need for certainty.” The *Petition* speaks vaguely of awaiting the development of “alternate equipment” that it must test, find reliable, and install. *Petition* at 17-18. Absent successful conclusion of ET docket No. 04-186, and given the apparent rejection of alternative vendors using permissible frequencies such as CAT, Petitioners do not explain why they believe alternative equipment will become available in five years.

It appears far more likely that, five years from now, Petitioners will leverage the embedded status of the equipment into a request for permanent waiver and protection from interference as a secondary service. The reliance of the industry on Telex equipment will

only increase with the proliferation of users and other stakeholders dependent upon it. This will make it impossible for the Commission to allow the “temporary” five year waiver to expire. To the contrary, if history is any guide, other users providing critical infrastructure will see the usefulness of the Telex equipment and petition the Commission for permission to use the technology as well. The Commission will again grant “temporary” waivers, and the cycle will repeat.

The history of wireless microphones and other low power auxiliary stations (LPAS) authorized under Part 74 illustrates this point. The Commission approved the service as a secondary service within the band purportedly limited to use by broadcasters or those in related fields, and limited their use to a relatively few bands. As the use of wireless microphones and other LPAS devices proliferated, the Commission expanded the number of channels available for use. *Review of Subpart H, Part 74 of the Commission’s Rules, Low Power Auxiliary Stations*, 2 FCCRec 345 (1987). The Commission also expanded the equipment eligible for certification. *Review of Technical and Operational Requirements: Part 74 Auxiliary Stations*, 7 FCCRec 490 (1992). At the same time, the number of users – both eligible and ineligible under the Commission’s rules -- has proliferated. Today, anyone can buy a wireless microphone operating on the broadcast frequencies at a local radio shack or through an internet vendor. This proliferation, completely contrary to the assurances given when the original applicants sought permission to offer service, has now become a basis for denying new entrants with non-interfering uses entry to the spectrum. *See, e.g.*, Letter of Catherine Wang on behalf of Shure, Inc., December 7, 2004 (brochure detailing numerous uses and users of wireless microphones and maintaining that adoption of rules proposed in ET Docket No. 04-186 would disrupt these uses).

Accordingly, in addition to imposing an explicit condition with regard to ET Docket 04-186 as requested in Part III, the Commission should limit the term of the waiver to one year. In the event it takes longer than one year to complete ET Docket No. 04-186 and certify suitable equipment, Petitioners can continue to request one year waivers. This will discourage others from adopting the “temporary” Telex technology and creating pressure for a permanent waiver. At the same time, it will allow those plants that have equipment in place to await the development of suitable “alternate” equipment as described in the *Petition*.

## CONCLUSION

WHEREFORE, the Commission should grant the *Petition* of NEI, subject to the conditions described above.

Respectfully submitted,

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January 17, 2006